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www.msocialsciences.com**Exploratory Factor Analysis of Entrepreneurial Behaviour Among Business Owners in Food Processing Industry****Askiah Jamaluddin¹, Laily Paim¹, Ma'rof Redzuan¹, Husniyah Abd. Rahim¹**¹Faculty of Human Ecology, Universiti Putra MalaysiaCorrespondence: Askiah Jamaluddin (askiah02@yahoo.com)**Abstract**

The purpose of this paper is to identify the key domains of entrepreneurial behaviour among business owner in food processing industry. The study utilized a deductive research design and quantitative method. There are twenty-one statements about entrepreneurial behaviour to discover a core action associated with entrepreneurial behaviour. An entrepreneurial behaviour is defined as small family business strategic behaviour that captures specific entrepreneurial aspects (Walker and Brown, 2004). In additions, it is the actions taken by the small business owner to achieve business performance (Delmar, 1996). According to Kirkley (2015), entrepreneurial behaviour as self determined human action is based on a specific set of values which the individual uses to make decisions about how to behave in situations that a meaningful to their business. The questionnaires focused primarily on the meaning of entrepreneurial behaviour as self-determination to be succeed in business. There were 70 respondents were selected by simple random sampling. The data were analysed by Exploratory Factor Analysis (EFA) and categorised into relevant domains. The result shows four specific domains of entrepreneurial behaviour business owner in food processing industry, namely, leadership, proactiveness, committed and risk taking. The finding items to each of these domains are consistent with the small family business perspective. The practical implication is the presence of the specific core action associated with entrepreneurial behaviour. The business owner should employ the four core action to sustain the business. The result of this study is importance to academicians in small business area, business advisor from government and non-government sectors, and small family business owner.

Keywords: small family business, entrepreneurial behaviour, business owner, food processing**Introduction**

Entrepreneurship is the dynamic process of generating family income and creating incremental wealth. Family income and wealth are created by individual and family members through the entrepreneurship activities. The activity gives an opportunity for them to improve the quality of family life. One of the main stream of entrepreneurship research is about entrepreneurial behaviour among business owner. It has been shown there are several definitions and domain arise depends on research perspectives.

Entrepreneurial behaviour has been defined by several researchers. Their definitions are based on researchers' perspectives such as large or small scale business, and non family or family business. This research employed the entrepreneurial behaviour definition which is related to small scale business

owner. Walker and Brown (2004), mentioned entrepreneurial behaviour as small family business strategic behaviour that captures specific entrepreneurial aspects. Then, Delmar (1996) explained that the entrepreneurial behaviour means it is the actions taken by the small business owner to achieve business performance. According to Kirkley (2015) entrepreneurial behaviour as self determined human action is based on a specific set of values which the individual uses to make decisions about how to behave in situations that are meaningful to their business. Those entrepreneurial behaviour definitions are closely related to small scale business owners.

This study is more on individual- level of small business in the food industry. The study about business owner's behaviour in managing the small family business is needed. They are the main person in the business organisation which play role as a manager and determine the successful of their business. Recognising the fact that entrepreneurial behaviour has wide range of attributes which characterized by innovativeness, proactiveness and risk-taking Miller (1983). Moreover, Lumpkin and Dess (1996) added the entrepreneurial behaviour domain consists autonomy and competitive aggressiveness. Another researcher in this field is Delmar (1996), Steir, Chrisman and Chua (2004), Zahra, Hayton and Salvato (2004) and Kellermanns, Eddleston, Barnett and Pearson (2008). Their study about entrepreneurial behaviour domains among small business owner.

The study of entrepreneurial behaviour at the individual level are distinct from those at the organization level (Lau, Shaffer, Chan and Man, 2012). Entrepreneurial behaviour at the individual level may inform the business activities which they operated day by day. Whereas, the organization level may focus on the small business owners as an innovative person. This study employ multidimensional domain comprising various facets that are manifestations of small business owner behaviour. Therefore, the purpose of this study is to identify the key domains of entrepreneurial behaviour among business owner in food processing industry.

Methodology

The research design employed in this study was a survey design. The data obtained through primary data collection. The data were collected through a survey instrument which is a questionnaire. The question developed by review the relevant literature to identify the major entrepreneurial behavioural characteristics. Then, the questionnaire is developed based on review and the consultancy experience of two experience researchers in small business. Next, the survey instrument to identify behavioural qualities is developed.

The questionnaire was answered by the business owner of the small family business in food processing industry. The sample was chosen by simple random sampling from Perak, Selangor, Terengganu and Johor. There were 70 small business owners were selected as a sample. The data obtained was analysed by Exploratory Factor Analysis (EFA).

Results and Discussion

Business owner background

A descriptive analysis was performed to provide the business owner background. Most of the respondents represented mainly by female constituted 70% women and 30% men. Respondents' education level primarily represented by 58.6% with SPM level, 17.1% with primary level and 14.3% with SRP level, 7.1% with Degree holder and 2.9% is not schooling. Mostly women involved in food processing industry, which it is suitable with woman characteristics and roles.

In average the age of the business owner in this study is 48 years old. Now they were in the middle age group. The finding shows that the business owner involves in the food processing business during young age. In average their age during the startup stage of the food processing business is 33 years old. Some of the respondent has more experience in the food processing business where they are operating

the business more than 10 years. They went through the business cycle and experience with their job as a business owner in food processing industry.

The majority of the business owner is married. The marital status of the business owner is 87.1% has been married, 2.9% is single and 10% is divorce. Their spouse is older than business owner. In average the spouse age is 50 years old. In small family business, the spouse is living with the business owner in the same house. The burden as a business owner could be shared with their spouse even though the spouse is uninvolved full time with the business. The finding illustrates that the spouse involves in small family business as a full time worker is 50.8%. This explains half of respondent work with their spouse. It could be considered as a co-entrepreneur group. There is 31.1% of the spouse work as a part-time worker, followed by 16.4% spouse involves if they have time to do so and 1.6% uninvolved in the business.

The business characteristic for the respondent is explained. The business is still in the growing stage and in average the monthly business income is RM 5935. In addition, the result shows that the majority of the business types is registered as an individual company and 17.6% is a private limited company. The name used to register the company shows that 76.5% use their own name, 13.2% use the spouse's name, 7.4% use other's name and 2.9% use their children's name. It should be concluded that the majority of the business is owned by a business owner.

Exploratory Factor Analysis of Entrepreneurial Behaviour

The concepts of entrepreneurial behaviour at the small family business circumstances. The composite result of the interaction between each item is analysed. Pearson correlation coefficient were performed on the 21 entrepreneurial behaviour items. A review of the correlations shows that 210 intercorrelations, 165 were significant of the .05 and .01 level. Thus, 78.6% of the correlations are statistically significant. Principle components analysis of the 21 items resulted in four domains with eigenvalues in excess of 1.0. In order to identify broader and more reliable domains of entrepreneurial behaviour among 70 business owners, the data gathered through questionnaires were analysed by exploratory factor analysis (EFA). These domains allow us to paint a clearer picture about entrepreneurial behaviour among business owners in food processing industry.

Exploratory factor analysis for entrepreneurial behaviour was to reduce the number of items below the factor loading of 0.5 and then identify the domain. The factor loading is clarified based on the factor loading of 0.5 to be used for 70 respondents (Hair et al., 2010). The analysis derived original factors, rotated it with varimax criteria to produce orthogonal dimensions, and then normalized.

Four factors were rotated using Varimax rotation method. The Varimax rotation method was selected for its simplicity and rigor (Nunnally, 1978). In addition, the eigenvalues more than one was applied. The result shows that there were four factor analyses, respectively.

Exploratory factor analysis for entrepreneurial behaviour was to reduce the number of items below the factor loading of 0.5 and then identify the domain. Principal component analysis (PCA) was conducted on the 21 items with varimax (orthogonal rotation). The items were decreased from 21 to 15; items 8, 10, 12, 13, 14 and 16 were excluded from the items because the factor loading was less than 0.65.

The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = 0.805. Bartlett's test of sphericity $\chi^2 = 1040.388$, $p < 0.001$, $df=210$, indicated that correlations between items were sufficiently large for PCA. An initial analysis was operated to obtain eigenvalues for each domain in the data. Four domains had eigenvalues over Kaiser's criterion of 1 and in combination explained 68.5% of the variance (Table 1).

Table 1: Principal Component Analysis of Entrepreneurial Behaviour and Total Variance Explained (Eigenvalues >1)

Component	Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %
1. Leadership	4.460	21.239	21.239
2. Pro-activeness	3.667	17.462	38.701
3. Committed	3.372	16.056	54.757
4. Risk taking	2.892	13.772	68.529

There are four domains in entrepreneurial behaviour – leadership, pro-activeness, committed and risk taking. An assessment of the reliability analysis of the whole domain of 15 items, the Cronbach's Alpha is .881. It means that the 15 items in Entrepreneurial Behaviour have high reliability. Reliability analysis of the remaining variables of the three domains that have high reliability were leadership, committed and risk taking, while, pro-activeness has an acceptable level of reliability (Table 2).

Table 2: Reliability for Entrepreneurial Behaviour Domain

	Domain	Item	Cronbach's Alpha
1	Leadership	6	.883
2	Pro-activeness	2	.546
3	Commitment	4	.843
4	Risk taking	3	.824
	All items	15	.881

Interpreting the Entrepreneurial Behaviour Domain

Six items from leadership domain were tested: 15, 17, 18, 19, 20, 21. Table 3 shows six of 21 items in factor one refers to leadership domain. Relative Contribution to Explained Variance is 21.2%. The business owner tends to behave as a leader in managing the small family business. They strive to be given machines and loans from government agencies for business expansion. The business owner develops a networking with the government officer and shows their business ability to expand the business. Generally, the business owners get access to the information from government agencies about the resources they could have to expand their business.

Turnover always occurs in food processing industry. Even the machines and hi-technology appeared in food processing industry, but, the loyal and skilled worker are important in this industry particularly in food production sections. Food processing business owner has taken a good care of their workers. The worker has to improve their skill in the food production. This could reduce the cost of production waste. The loyal worker is important for food processing business owner to keep business sustain and perform in the industry. As a good leader, they have to create the family and teamwork environment in the business circumstances. Thereby, leadership behaviour is the main factor in small family business in this study.

Some of the studies analysed that innovative behaviour is the vital entrepreneurial behaviour, followed by proactiveness and risk taking (Kellersman, Eddleston, Sarathy & Murphy, 2012). However, the current research found that the leadership behaviour is the main domain as entrepreneurial behaviour. This is related to the difference business types and business culture of the research sample.

Table 3: Items Loading on Domain 1

Item Number	Statement	Factor Loading
15.	I strive to be given machines and loans from government agencies for business expansion.	.776
17.	I am willing to take my workers for vacation or have thanksgiving ceremonies with them to increase teamwork spirit	.678
18.	I am willing to spend time with my skilled- workers to build loyalty towards the business.	.740
19.	If discipline problems occur among workers, I will not hesitate to take immediate action.	.827
20.	I am willing to bear hardship as a leader and do something without waiting for instructions.	.669
21.	I am willing to spend time guiding my workers in producing highly skilled workers.	.693

Table 4 represents the pro-activeness behaviour among business owner in food processing industry. There were two of 21 items in domain 2 refers to leadership domain. Even the Cronbach's Alpha is .546. Even the reliability analysis is acceptable level but the items is needed as entrepreneurial behaviour in food processing business owners. The Relative Contribution to Explained Variance is 17.5%. The business owner willing to pay some money for their product promotion. This item shows that Malay business owner in food processing industry knows the important to be proactive by investing some money in product promotion. The business networking also needs proactive behaviour from business owner sides.

Table 4: Items Loading on Domain Two

Item Number	Statement	Factor Loading
9.	I am willing to pay some money to those who can assist me in overseas product promotion/penetrating the hypermarket.	.654
11	I strive to build business networking.	.689

Domain three illustrates four items in the commitment behaviour for this study (Table 5). The relative contribution to Explained Variance is 16.1%. The reliability analysis shows that Cronbach's Alpha is high which is .843. The business owners are willing to work more hours in business rather than have time for themselves. As a business owner in food processing industry, they have to sacrifice their leisure time to fulfil the customer order. They were surely committed in the business operation. In this case, the commitment behaviour is required as a small business owner in food processing industry.

Table 5: Items Loading on Domain Three

Item Number	Statement	Factor Loading
1.	I will not sleep until the customer's order is completed.	.781
2.	I am willing to send immediately the orders requested by the customer, even though late at night.	.799
3.	I do not mind if I don't have any free time of my own.	.825
4.	I am able to be patient with troublesome customers.	.696

In this study, risk taking behaviour is the fourth domain in entrepreneurial behaviour (Table 6). Three items remain as a risk taking domain. The relative contribution to Explained Variance is 13.8% and the Cronbach's Alpha is .824. In current research finding, the business owner insist to take risk to expand their business. Then, this research shows that the small business owners willing to spend money and time to enhance their product quality by attended the training. They also insist to invest money for business continuing even the recession. This explained that the business owners with these behaviour is not just have a characteristic as a small family business owner but have entrepreneurship behaviour.

Generally, the small family business owner aims is the business sustain small for living purposes, whereas, entrepreneur has higher aims such as to expand the marketing and create more jobs for people. This research is about small business owners and some of them have entrepreneur characteristics. Uhlaner, Kellersmanns, Eddleston and Hoy (2012) studied about the intersection of entrepreneurship and family business showed that the family business certainly embrace entrepreneurship. Their finding shows that family business is alike to change and grow the business.

Table 6: Items Loading on Domain Four

Item Number	Statement	Factor Loading
5.	I insist on expanding my business, even though my business faces financial problems.	.787
6.	I insist on investing my money and continuing managing the business, even during economic recession.	.663
7.	I am willing to invest money and time to attend a series of courses for the purpose of increasing the product quality, even though I have many loyal customers and high demand.	.710

This study reports the exploratory factor analysis (EFA) of entrepreneurial behaviour among business owners in food processing industry. The total explain variance for leadership, proactiveness, commitment and risk taking is 68.5 per cent. This explained the items in each domains loaded well. Bolton and Lane (2012) supported the finding which accounting for 60 per cent of the total explained variance is a distinct factor emerged from the exploratory factor analysis.

In creating the entrepreneurial behavior domains, the integrated findings from entrepreneurial literature with the real-life experiences of the small business owners are collected. The output from the exploratory factor analysis (EFA) process, this research identified four key entrepreneurial behaviours: leadership, pro-activeness, committed, risk taking. These four behaviours are demonstrations of small business owners in food processing industry.

These four behavioural domains of small family business owners are consistent with the existing literature. Miller (1983) mentioned that the entrepreneurial behavior is characterized by innovativeness, proactiveness and risk-taking. Moreover, Lumpkin and Dess (1996) added the entrepreneurial behaviour domain consists autonomy and competitive aggressiveness. Those paper supports the current findings about the entrepreneurial behaviour domains among the business owners in food processing industry.

Leadership and pro-activeness are explained approximately 40 per cent of the variation in entrepreneurial behaviour in this study. It has consistently been identified conceptually and empirically as distinctive entrepreneurial behaviour for small family business owner (Walker & Brown, 2004; Kirkley, 2015). Although risk taking has been cited more frequently as an important entrepreneurial behaviour, that domain only represents 13.7 percent of the variation in entrepreneurial behavior. The integrated of these four qualities could be highlighted as the key entrepreneurial behaviour among business owner.

Conclusions

The entrepreneurial behaviour domain among business owner in small scale business is leadership, pro activeness, commitment and risk taking. The four distinct domains have demonstrated reliability and validity. These four domains are the same variables that have been predominantly used in existing entrepreneurial behaviour literature with human capital theory as a basis. The research has shown a disparity in the assessment of how entrepreneurial a small business owner in food processing industry may be in the future. The entrepreneurial behaviour traits of business owners in this industry have been examined and there is extensive research should be done in the future.

Future research essentials to develop a better understanding of the four entrepreneurial behaviour domains in small family businesses. In, this regard, future research may have to extend the current research by initially focusing on different types of business. Furthermore, future empirical research needs to expand the content of entrepreneurial behaviour for small family business.

The study of an entrepreneurial behaviour among small scale-business owner should be identified as one of the important research. The small scale business gives impacts on Malaysia economy and social development. In addition, the huge number of entrepreneur is from small scale business which is operating with the one or more family members (SME report, 2015). Therefore, it is crucial to understand entrepreneurial behaviour in small family business. Even the developed country such as America is still progressively developing research in entrepreneurial behaviour (Kellermanns & Eddleston, 2006; Kellermanns, Eddleston, Barnett and Pearson, 2008).

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